



**UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/801,812	02/14/97	GIVENS	

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MM91/0821

J 11675.106

EXAMINER

EATON, K	
ART UNIT	PAPER NUMBER

2823
DATE MAILED: 08/21/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/801,812

Applicant(s)

GIVENS, JOHN H.

Examiner

Kurt M. Eaton

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2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 and 36-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 and 36-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 19.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 16, 23, 24, 28, 36, 45, 48, 57, and 62 (and thus all claims dependent from them) are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Subject matter not enabled by the specification as originally filed includes the limitation variously stating a step of forming a conductive layer on the seed layer including the portion of the seed layer within the recess as found in the aforementioned claims. This newly added limitation constitutes new matter because the specification does not disclose forming the conductive layer on the seed layer including portions of the seed layer within the recess; forming the energy absorbing layer on the conductive layer; and applying, omnidirectionally, energy to the energy absorbing layer to cause the conductive layer to flow within the recess. If the conductive layer is already formed in the recess, how can it be caused to flow within the recess upon carrying out the step of omnidirectionally heating the energy absorbing layer? Indeed, as indicated by applicant at page 31, item (5) of the amendment/response filed 6/8/01, applicant indicates the instant amendment pertaining to the aforementioned limitation be interpreted such that the conductive material is formed into the recesses prior to any omnidirectional application of energy. It is respectfully submitted that the

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specification as originally filed does not indicate that the conductive layer is formed within the recesses prior to being flowed into the recesses.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 46, 47, and 54-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu as applied to claims 1, 3, 4, 7-11, 13, 14, 17-21, 36-45 and above, and further in view of Schacham-Diamand, as previously applied in the Office Action mailed 3/8/01.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 16, 23, 24, 28, 36, 45, 48, 57, and 62 (and thus all claims dependent from them) have been considered but are moot in view of the new ground(s) of rejection as necessitated by the instant amendment.

Response to Arguments Concerning Rejection under 35 USC § 103(a)

5. Applicant's arguments filed 6/8/01 have been fully considered but they are not persuasive.

6. Applicant asserts the instantly pending claims are patentable over the applied prior art because Xu does not teach or disclose the formation of a layer of conductive material such as that recited in the present claims that extends over the seed layer, not only on the flat and horizontal portions of the seed layer, but also on the seed layer within the recesses.

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The examiner respectfully submits Xu does teach the formation of a layer of conductive material that over the seed layer, not only on the flat and horizontal portions of the seed layer, but also on the seed layer within the recesses (see Figure 4 of Xu, and related text, for example).

7. Applicant contends "Xu does not teach or suggest the formation of an energy absorbing layer in terms of characteristics and functions that are neither disclosed nor suggested in Xu".

The examiner respectfully submits that this statement is unclear and cannot be fully responded to in its present state and invites applicant to clarify this issue.

8. Applicant asserts that since the materials of Xu are selected in terms of their tensile stress, compressive stress, and electrical conductivity, Xu cannot teach or suggest how to perform the material selections recited in the present claims because the instant invention recites material selection for different layers in terms of melting points, thermal absorption capacities, and thermal insulation capacity, in addition to electrical conductivity.

The examiner respectfully submits that, regardless of the name or label attached to any one of the layers as instantly claimed, the materials taught by Xu are the same as those which are claimed. One could make an argument similar as previously stated by saying that the name of a layer has to an even number of letters - regardless of the name associated with the physical material, Xu teaches the corresponding materials as instantly claimed.

9. Applicant contends that it would not have been obvious to one of ordinary skill in the art at the time the invention was made to consider the diffusion barrier layer in Xu as two sequentially deposited layers composed of the same material on grounds that separating what was once one layer, into many layers (of the same material, equal in cumulative thickness to the original single layer), does not involve routine skill in the art. Applicant makes this contention because "Xu does not disclose or suggest the formation of a barrier layer and a seed layer" and the "characteristics,

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features, and advantages of forming a seed layer and a barrier layer do not follow from the teachings of Xu and they are not suggested in the cited references”.

The examiner respectfully submits that there are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998). In the instant case, while Xu does not disclose or suggest the formation of a barrier layer and a seed layer, the characteristics, features, and advantages of forming a seed layer and a barrier layer as instantly claimed and supported by the specification may follow from the teachings of Xu. The examiner respectfully submits the teachings by Xu for the provision for a barrier layer and seed layer as instantly claimed and supported by the specification was asserted to be within the knowledge of persons of ordinary skill in the art.

10. Applicant contends Xu does not show wherein the recess has an aspect ratio greater than about 4:1. Furthermore, applicant contends the examiner did not point out with specificity a cite that would support the assertion that Xu discloses recesses with aspect ratios greater than about 4:1.

The examiner respectfully submits that Xu does show wherein the recess has an aspect ratio greater than about 4:1. Accordingly, the mere fact that Xu was cited indicates specificity was made to enough to cite such an aspect ratio in a recess.

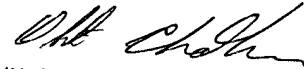
Conclusion

4. Paper related to this application may be submitted directly to Art Unit 2823 by facsimile transmission. Papers should be faxed to Art Unit 2823 via the Art Unit 2823 Fax Center located in Crystal Plaza 4, room 4C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2823 Fax Center number is

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(703) 308-7722 or -7724. The Art Unit 2823 Fax Center is to be used only for papers related to Art Unit 2823 applications.

Any inquiry concerning this communication of earlier communication from the examiner should be directed to **Kurt Eaton** at (703) 305-0383 and between the hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via kurt.eaton@uspto.gov.



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